

PATENT ABSTRACTS OF JAPAN

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(71)Applicant : ALPINE ELECTRON INC

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(72)Inventor : AIMI SATORU

ISHIKAWA KUMIKO

FUJIWARA KIYOZUMI

OIKAWA TAKU

TAKIZAWA AKIHIKO

TAKAHARA SHU

OGAWA HIRONAGA

SUKOU HIDEJI

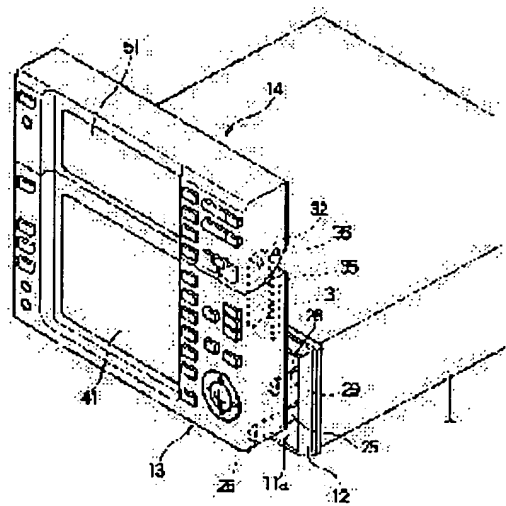
ENDO HIDEKI

(54) DISPLAY DEVICE

(57)Abstract:

PURPOSE: To efficiently house display members in the display device and to widen the substantial area of a screen at the time of use.

CONSTITUTION: The first display member 13 turns to a rising posture in front of a casing 11 and the second display member 14 is installed thereon flush with each other. The screens 41 and 51 of both display members 13 and 14 exist adjacently to widen the substantial display area. The continuous display of the map information of a navigation system on both screens 41 and 51 is thus possible. The second display member 14 is installed to close the front of the casing 11 when the first display member 13 is housed in a parallel posture in the casing 11. At this time, only the screen 51 of the second display member 14 is usable.



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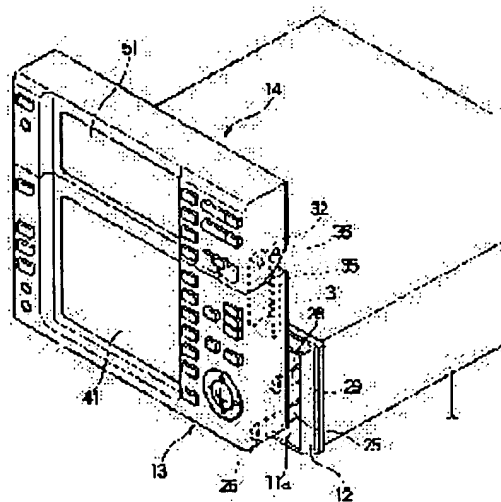
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CLAIMS

[Claim(s)]

[Claim 1] The 1st display material which can move between the position contained in a case, and the positions installed in the exterior of a case, Display characterized by preparing the 2nd display material compared with the display material of the above 1st where the 1st display material is installed out of a case, and preparing the screen which adjoins the 1st and 2nd display material mutually where both displays material is put in order.

[Claim 2] Display according to claim 1 with which the 2nd display material is installed in the front face of a case where the 1st display material is contained in a case.

[Claim 3] Display characterized by providing the following. The case by which the insertion mouth or control unit of a record medium was formed in the front face. 1st display material which can move between the positions where the position and the aforementioned insertion mouth which are installed in the front face of the aforementioned case, or a control unit appears. The screen which the 2nd display material compared with this 1st display material is prepared, and adjoins the 1st and 2nd display material mutually where both displays material is put in order.

[Claim 4] The 2nd display material is the display according to claim 3 which can be detached and attached freely to the 1st display material.

[Claim 5] Display according to claim 3 connected so that the 2nd display material and the 1st display material can fold into the state of lapping mutually.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Industrial Application] this invention relates to the display which is applied to display, such as an object for mount which has screens, such as a liquid crystal panel, and home use, especially display material changes into a receipt state, and can moreover make large area of the screen which can be viewed at the time of use.

[0002]

[Description of the Prior Art] Recently, the display material equipped with the liquid crystal panel used as the display screen of a navigation system as a TV receiving set is installed in in the car [of an automobile]. As a general thing, the display material which has a liquid crystal panel is attached in the upper limit of the support saddle of the exclusive use which starts from the floor line of an automobile etc. Moreover, the display of a display material receipt formula as shown in drawing 13 is also proposed. The display material 3 to which the drive bracket 2 which moves to an A1-A 2-way at the case 1 by which the structure is laid under the indoor console panel P of an automobile is formed, and has monitor display 3a, such as a liquid crystal panel, to this drive bracket 2 is supported free [rotation]. While the drive bracket 2 moves to A 2-way and is moving to the back end in a case 1, the display material 3 serves as a horizontal position shown by the (b), and is contained in a case 1. If two moves in the A drive bracket 1 direction, the display material 3 projects ahead of a case 1, and the display material 3 will show and start by the (b) with this protrusion operation, it will rotate into a posture, and monitor display 3a will be turned to the vehicle interior of a room.

[0003]

[Problem(s) to be Solved by the Invention] However, in that by which display material is attached in the support saddle which starts from a floor line etc., in order that display material may narrow habitation space, it is not made to what has the big display screen, but becomes a small thing about a 5 inch screen. Moreover, in the thing of the display material receipt formula shown in drawing 13, while not using it, in order to start in the position where the display material 3 was dedicated in the case 1, and the display material 3 approached the console panel P at the time of use, habitation space is not narrowed so much.

[0004] However, in what is shown in drawing 13, since a case 1 is what is laid under the console panel P, a limitation is in the content volume and, therefore, the display material 3 can seldom be enlarged. Since there is a possibility of hitting a shift lever 4 etc. when the display material 3 furthermore projects in the A1 direction by the horizontal position, a limitation is to enlarge the display material 3 also from this. In any case, the screen of the display material used for the display for mount becomes a small thing, and an informational screen product will be limited. Moreover, although what has the larger breadth size of the direction of X than the dip size of the direction of Y oblong is common at drawing 13 as for screens, such as a liquid crystal panel for example, on the screen used as a navigation system Since it is displayed in many cases that the arrow which shows the current position and travelling direction of an automobile serves as facing up of the direction of Y, on an oblong screen, the map information on the direction of Y which travelling direction, i.e., an arrow etc., shows may become short, and it may

become difficult to discriminate the direction of the purpose.

[0005] this invention does not solve the above-mentioned conventional technical problem, and it can store it, without narrowing habitation space, when not using it, and it aims at offering the display which could be made to make an informational screen product large substantially at the time of use.

[0006]

[Means for Solving the Problem] The 1st display material to which the display of this invention can move between the position contained in a case, and the positions installed in the exterior of a case, It is characterized by preparing the 2nd display material compared with the display material of the above 1st where the 1st display material is installed out of a case, and preparing the screen which adjoins the 1st and 2nd display material mutually where both displays material is put in order.

[0007] In this case, it is in the state where the 1st display material was contained in the case, and it is possible to consider as the structure where the 2nd display material is installed in the front face of a case.

[0008] Moreover, the case by which, as for the display material of this invention, the insertion mouth or control unit of a record medium was formed in the front face, The 1st display material which can move between the positions where the position and the aforementioned insertion mouth which are installed in the front face of the aforementioned case, or a control unit appears, It is characterized by preparing the 2nd display material compared with this 1st display material, and preparing the screen which adjoins the 1st and 2nd display material mutually where both displays material is put in order.

[0009] In the above, it is good also as attachment and detachment being free to the 1st display material in the 2nd display material, and is [0010]. Or you may connect so that the 2nd display material and the 1st display material can be folded into the state of lapping mutually.

[0011]

[Function] In this invention, habitation space is not narrowed by considering as the structure which contains display material inside a case by the display material in the state where it is not used. Moreover, since the screen of each the 1st and 2nd display material adjoins at the time of use and it is located, an informational screen product becomes large substantially. When separate information can be displayed on each of this screen and it is used as a navigation system etc., it can make lengthwise form both screens successively. In this case, if the run direction of an automobile is expressed as a upward arrow etc., the map information on travelling direction can be displayed more widely than before.

[0012] Moreover, although it is also possible to contain in a case with the 1st display material, the 2nd display material can express information only as the screen of this 2nd display material, if the 1st display material installs the 2nd display material ahead of a case when contained in the case.

[0013] Furthermore, in this invention, when the insertion mouth and display material of a record medium are prepared in the front face of a case, the aforementioned front face of a case can usually be stored in a wrap position for the 1st display material. If this 1st display material is moved, the aforementioned insertion mouth and display material will appear and insertion and various operations of a record medium into a case will be attained. Since the 2nd display material is made to connect and the screen of both displays material is made to adjoin when the 1st display material separates from the front face of a case also in this case, an informational screen product can be substantially made large.

[0014] To the 1st display material, the 2nd display material at this time is good also as what can be detached and attached freely, or is in the state which folded up the 1st and 2nd display material, and may store the aforementioned insertion mouth and display material in a wrap position for both displays material.

[0015]

[Example] Hereafter, the example of this invention is explained with reference to a drawing. The perspective diagram in which drawing 1 shows the display for mount as the 1st example of this invention, the side elevation in which display material shows the state where drawing 2 was contained by the case, the perspective diagram in which drawing 3 shows the example of mounting of this display for mount in the car, drawing 4, or drawing 6 is the front view showing the example of the information display of a screen. In drawing 1 and drawing 2, a sign 11 is a case. This case 11 is the so-called Wang

Dean (1DIN) size, and as shown in drawing 3 , it serves as a size which can be laid underground in the installation space of the same capacity as the sound equipments O, such as a car radio, a CD player, and a tape player, in the console panel P of an automobile. The clock decorative rim 12 is attached ahead of the case 11. A case 11 is laid underground in a console panel P, and a clock decorative rim 12 appears in the front face of a console panel P. The portion surrounded by the clock decorative rim 12 is opening 11a of a case 11. The 1st display material 13 and the 2nd display material 14 are formed in this display for mount. As shown in drawing 1 , outside a case 11, depending on a way, both the displays material 13 and 14 is put in order up and down, and can be arranged now.

[0016] As shown in drawing 2 , the guide section 21 is formed in the interior of a case 11, and it is supported so that the drive bracket 22 can move to an A1-A 2-way by this guide section 21. The 1st motor is formed in the drive bracket 22, and the rotation drive of the pinion gearing 23 is carried out by this motor. The rack 24 was formed in the case 11 and the aforementioned pinion gearing 23 meshes on this rack 24. By carrying out the rotation drive of the pinion gearing 23 by the aforementioned motor, the drive bracket 22 can be moved now to an A1-A 2-way along with the guide section 21 and a rack 24. The support plate 25 of the couple which opened the interval in the direction of the space back of drawing 2 is fixed to the drive bracket 22, and the base of the 1st display material 13 is supported free [rotation] with the shaft 26 prepared in the point section of the support plate 25 of this couple. In the drive bracket 22, it is supported so that the drive rack 28 can move in the (c) direction, and the pinion gearing 27 by which a rotation drive is done by other motors carried in the 1st motor of the above or the drive bracket 22 meshes with this drive rack 28. The nose of cam of the drive rack 28 is connected with the 1st display material 13 by the drive pin 29.

[0017] An interval is opened in the point section of the 1st display material 13 in the direction of the space back of drawing 2 , the connection support plate 31 of a couple is being fixed, and the 2nd display material 14 is connected by the connecting shaft 32 prepared in this connection support plate 31. The drive section 33 is formed in the interior of the 1st display material 13, it is supported so that the drive rack 35 can move in the (d) direction into this drive section 33, and the nose of cam of the drive rack 35 is connected with the base of the 2nd display material 14 by the drive pin 36. The 2nd motor was formed in the drive section 33, and the pinion gearing 34 which drives by this motor meshes with the aforementioned drive rack 35.

[0018] In drawing 2 , the 1st display material 13 by which the drive rack 28 supported in the drive bracket 22 drove in the (d) direction, and was supported by the point section of a support plate 25 serves as a horizontal position, the drive bracket 22 moves to A 2-way further, and the 1st display material 13 is contained in the case 11. At this time, within the drive section 33 in the 1st display material 13, it is driving in the (c) direction, and therefore, the drive rack 35 makes a connecting shaft 32 the starting point, and is rotating the 2nd display material 14 to the right-angled sense to the 1st display material 13. At this time, the 2nd display material 14 is in the state which fitted in exactly in the clock decorative rim 12, and as shown in drawing 6 , only the 2nd display material 14 has appeared ahead of the case 11. If the 1st motor in the drive bracket 22 starts and the pinion gearing 23 rotates from the state of drawing 2 to a clockwise rotation, the pinion gearing 23 will move in the A1 direction in the state where it geared on the rack 24, and, therefore, will move the drive bracket 22 in the A1 direction along with the guide section 21. Therefore, while the 1st display material 13 has been a horizontal position, it projects in the A1 direction from the inside of a case 11, and the 2nd display material 14 moves in the A1 direction together with the perpendicular posture of drawing 2 .

[0019] If the 1st display material 13 projects completely out of a case 11, the drive bracket 22 will stop. And the power of the 1st motor in the drive bracket 22 is changed, or the pinion gearing 27 drives to a clockwise rotation by other motors in the drive bracket 22, and the drive rack 28 drives in the (c) direction. Therefore, the 1st display material 13 is pulled in the (c) direction by the drive pin 29, starts centering on a shaft 26, and is rotated to a direction. By adjusting the pinion gearing's 27 rotation, the 1st display material 13 starts and an angle is set up arbitrarily. The display material 13 of the above 1st starts, during rotation operation, the pinion gearing 34 drives to a counterclockwise rotation by the 2nd motor in the drive section 33, and the drive rack 35 moves in the (d) direction. Therefore, the 2nd

display material 14 rotates counterclockwise by making a connecting shaft 32 into the starting point, and it is put in order up and down so that the 1st and 2nd display material 13 and 14 may serve as the same field mostly, as shown in drawing 1 . In addition, receipt operation of the 1st display material 13 and the 2nd display material 14 can be performed by performing the drive of the above and an opposite direction.

[0020] In the example of mounting in the vehicle interior of a room shown in drawing 3 , the 1st display material 13 and the 2nd display material 14 which projected from the case 11 are put in order by the plane ahead [of a console panel P], and each display material 13 and 14 serves as slanting sense a little corresponding to the inclination of a console panel P. As shown in drawing 4 , the 1st screen 41 of an electrochromatic display panel is established in the front face of the 1st display material 13, and, similarly the 2nd screen 51 of an electrochromatic display panel is established in the front face of the 2nd display material 14. Both the breadth sizes of the 1st screen 41 and the 2nd screen 51 are W, and H1 and the dip size of the 2nd screen 51 of the dip size of the 1st screen 41 are H2. The 2nd display material 14 is installed in the front face of a case 11, as shown in drawing 2 , and the size of the length and width is decided with one DIN size. Therefore, the 2nd screen 51 is the small oblong configuration of the dip size H2. On the other hand, the length of the 1st screen 41 and the horizontal proportion are the same as a common television screen. And where the 1st and 2nd display material 13 and 14 is perpendicularly arranged in the exterior of a case 11, both the screens 41 and 51 adjoin up and down, and are located in a line, and a latus screen product is obtained substantially [a dip size / almost (H1+H2)] with the width-of-face size W.

[0021] Although various operating member is arranged in the front face of both the displays material 13 and 14, the operating member which performs operation about a setup and change of a screen display is arranged in the front face of the 1st display material 13. The operating member prepared in the 1st display material 13 is an electric power switch 42, the various setting buttons 43 and 44, the move input section 46 of a cursor display, the screen zoom operating button 47, various ***** 48, television ***** 49, etc. ON-OFF [with an electric power switch 42 / the display of Screen 41]. For example, if either changes and a screen display is changed to a navigation system by operation of ** 48, a map will be displayed on the 1st screen 41. The map which should be displayed by code input operation of setting buttons 43 and 44 is chosen. Moreover, selection of the information which changes, can perform memory operation etc. by ** 48, changes further, and is displayed on the 2nd screen 51 by ** 48 can be performed. Moreover, by the move input section 46 of a cursor display, the position of the cursor display 60 which shows the current position and travelling direction can be moved. Moreover, if television ***** 49 is pushed, a television screen will project on the 1st screen 41. Selection of a television channel is performed by the setting button 44 at this time.

[0022] In the front face of the 2nd display material 14, the operating member of the sake for sound operation is arranged. An electric power switch 52 is a thing for ON-OFF of the 2nd screen 51. The tuner setting button 53 and the disk selector button 54 are formed in the 2nd display material 14. A push on the tuner setting button 53 operates the tuner which receives FM broadcasting and AM broadcast. In addition, this tuner is prepared in the case 11. The disk selector button 54 operates the disk changer installed in the trunk room etc., and selection of the disk which should be played by this selector button 54 is made. Adjustment switches 56 and 57 are for performing song selection and a storage configuration when channel selection operation when the tuner is operating is performed or the disk changer is operating. Moreover, volume is set up by the volume control switch 58.

[0023] Selection of the information projected on the 2nd screen 51 as mentioned above was prepared in the 1st display material 13, is changed, and is set up by ** 48 etc. However, the information projected on the 2nd screen changes also to the 2nd display material 14, ** 55 is formed, and as shown in drawing 2 and drawing 6 , when the 2nd display material 14 is installed in the front face of a case 11, channel selection information, song selection information, a clock display, etc. are projected on the 2nd screen 51. As a concrete content of a display projected on the 1st and the 2nd screen 41 and 51, as first shown in drawing 4 , it can project so that both the screens 41 and 51 may be followed in the map of the predetermined area in a navigation system. In the example of drawing 4 , the cursor display 60 which

shows the current position of an automobile is an arrow display, and the direction of this arrow shows the travelling direction of an automobile. The sense of this arrow is turned upward and a map display moves according to movement of an automobile. The 2nd screen 51 adjoins on the 1st screen 41 of the area restricted as shown in drawing 4, since the map which follows both the screens perpendicularly located in a line has projected, only the part of the 2nd screen 51 can project widely the map information on travelling direction that the arrow of the cursor display 60 is suitable, and many information on travelling direction can be checked.

[0024] Moreover, the map of the area it is running now may be projected on the 1st screen 41, and the map display of an area other than the area under run on the 2nd screen 51 may be projected. Thereby, the map of the destination or a circumference area can be checked. Or as shown in drawing 5, you may be projected map information only on the 1st screen 41, and run information other than a map may be projected on projection and the 2nd screen 51. In the example of drawing 5, distance until it reaches there [the information on intersectional and there] where it should next turn on the 2nd screen 51 has projected. Or you may display anticipation time until it reaches the 2nd screen 51 at traffic congestion information and a certain point etc. Moreover, map information may be projected on the 1st screen 41, and the channel selection information and song selection information on operation of a tuner or a disk changer may be projected on the 2nd screen 51.

[0025] When projecting a television television screen on the 1st screen 41, the 2nd screen 51 may be erased or a time stamp etc. may be projected on the 2nd screen 51. As shown in drawing 1, where the 1st display material 13 is contained in a case 11, only the 2nd display material 14 appears ahead of a case 11. The state is shown in drawing 6. Although a tuner, a disk changer, etc. are operated by the various operating member prepared in the 2nd display material 14 at this time, the various information at this time is projectable on the 2nd screen 51. In drawing 6, the channel selection information on FM broadcasting and the equalizer display 61 are displayed.

[0026] The front view [side elevation / the] showing the state where the front view of the display for mount according / drawing 7 / to the 2nd example of this invention and drawing 8 were put in order, and two display material was put in order, as for drawing 9, and drawing 10 are the side elevation. In this example, a case 71 is two DIN (2DIN) size, and only one case 71 is laid underground and installed in the console panel P of an automobile in the space under which two sound equipments are originally laid. the front of a case 71 -- a nose -- the section 72 is attached A sign 73 is the 1st display material. the state of drawing 7 and drawing 8 -- the 1st display material 73 -- a nose -- it is installed in the state where it stuck ahead of the section 72 As shown in drawing 7 at this time, only the 1st display material 73 has appeared in the front face of a case 71. it is shown in drawing 10 -- as -- a nose -- the nose which the internal mechanism of the section 72 and the 1st display material 73 are connected by the arm 74, and shows the 1st display material 73 to drawing 8 by slide operation of this arm 74 -- it is shown in drawing 10 from the state stuck to the front face of the section 72 -- as -- a nose -- it can move now to the state where separated slightly to the front and it shifted from the section 72 upwards operation in case the 1st display material 73 moves between the states which show in the state which shows in drawing 8, and drawing 10 -- hand control -- you may carry out -- or a nose -- you may make it operate with the power of the motor formed in the section 72 and the case 71

[0027] it is shown in drawing 9 -- as -- the 1st display material 73 -- a nose -- the time of separating from the section 72 and shifting upwards -- the lower part of the 1st display material 73 -- a nose -- makeup side 72a of the front face of the section 72 appears The operating button 78 for making eccentric operation of the insertion mouth 75 of a mini disc, the insertion mouth 76 of a compact disk and a mini disc, or a compact disk etc. perform is arranged by this makeup side 72a. In addition, as for the insertion mouths 75 and 76, only either may be prepared, and the operating button 78 may be formed in the front face of the 1st display material 73. Moreover, the insertion mouths 75 and 76 may not be formed in makeup side 72a, but the small display screen which performs the various operating buttons for sound equipments, a channel selection display, etc. may be prepared. Moreover, in the aforementioned case 71, the drive for driving the mini disc and compact disk which were inserted from the above-mentioned insertion mouths 75 and 76 is built in. In addition, the record media inserted may be various cassette

tapes.

[0028] The 1st Screen 81 and various operating-member groups 82 by the electrochromatic display panel are prepared in the front face of the 1st display material 73. The kind and number of these operating-member groups 82 are as of the same kind as the various operating buttons prepared in the 1st display material 13 shown in drawing 4 etc. Moreover, you may include the operating button for reproduction of the mini disc and compact disk which were inserted in the operating-member group 82 of the 1st display material 73, a song selection setup, etc. as mentioned above. However, since the 1st display material 73 is a size which is in agreement with the front face of the case 71 of 2DIN sizes, the area of the 1st screen 81 is a little small thing doubled with 2DIN sizes. then, it is shown in drawing 9 and drawing 10 -- as -- the 1st display material 73 -- a nose -- in the state where separated from the section 72 and it shifted upwards, the 2nd display material 85 can be attached now on the 1st display material 73 This 2nd display material 85 is inserted in the upper surface of the 1st display material 73 by the connection material 86, and is made and attached. The 2nd power supply, video signal, etc. to the display material 85 are given through the connector in the connection material 86. The 2nd screen 87 by the electrochromatic display panel is established in the 2nd display material 85. This screen 87 has the same screen product as the aforementioned screen 81. And as shown in drawing 9 and drawing 10 , when the display material 73 and 85 is put in order, both the screens 81 and 87 will adjoin up and down, and will be located in a line.

[0029] with this display for mount, the 2nd display material 85 is carried out the upper shell of the 1st display material 73 outside usually, and it is shown in drawing 7 and drawing 8 -- as -- the 1st display material 73 -- a nose -- it is stored in the state where it stuck ahead of the section 72 As shown in drawing 7 , an image can be projected on the 1st screen 81 in this state. This image is a television television screen or the map information on a navigation system. or the 1st display material 73 -- a nose -- it may separate from the section 72, and may be made to shift upwards, and an image may be projected only on the 1st screen 81 in this state moreover -- the case where receipts and payments of a mini disc and a compact disk are performed into a case 71 -- the 1st display material 73 -- a nose -- it moves to the position which separates from the section 72 and is shifted upwards -- making -- the bottom of the 1st display material 73 -- a nose -- makeup side 72a of the section 72 is exposed Insertion and eccrisis of a mini disc or a compact disk are performed from the insertion mouths 75 and 76 in this state.

[0030] moreover -- for example, when displaying the screen of a navigation system, it is shown in drawing 9 and drawing 10 -- as -- the 1st display material 73 -- a nose -- a substantial area of the display screen is expandable by separating from the section 72, making it shift upwards, and installing the 2nd display material 85 on the 1st display material 73 In this case, the map information ahead of travelling direction can be widely displayed by indicating the same map information as both the 1st and 2nd screen 81 and 87 by continuation like the example shown in drawing 4 , and showing the cursor display 60 which shows the position and travelling direction of an automobile in the 1st screen 81. Or as shown in drawing 9 , it may project by scale which is different in the map of a run area on the 1st Screen 81 and 2nd screen 87, and the cursor displays 60a and 60b which show the current position and travelling direction of an automobile to both the screens 81 and 87 may be shown separately. Or you may display an information image with the same separate combination as the 1st example explained on the 1st and the 2nd screen 81 and 87. Moreover, although the 2nd display material 85 can detach and attach freely to the 1st display material 73 in the 2nd example shown in drawing 7 or drawing 10 , in the example of the 2same DIN sizes, it is good also as an example shown in drawing 11 and drawing 12 .

[0031] The 1st display material 73 is contained in a case 71 using having been shown in drawing 2 , and an internal mechanism of the same kind, and it enables it to install the 2nd display material 85 in the front face of the case 71 of 2DIN sizes in the example shown in drawing 11 at this time. moreover -- drawing 12 -- a nose -- the case where the insertion mouths 75 and 76 as shown in makeup section 72a of the front face of the section 72 at drawing 9 etc. are formed -- the 1st display material 73 -- a nose -- it fits in the position stuck to the front face of the section 72 and the 2nd display material 73 and 85 connects with the 1st by the link 88 -- having -- a nose -- the 1st and 2nd display material 73 and 85 is

folded up and installed in the state of sticking mutually, ahead [of the section 72] It is also possible to consider as the structure where the 1st and 2nd display material is contained [both] in a case, in each aforementioned example furthermore. Moreover, this invention may be the display or the display for home use which is not restricted to the display for mount but is carried in an airplane etc.

[0032]

[Effect of the Invention] In invention according to claim 1, since the 1st display material is contained inside a case, space is not narrowed by the display material in the state where it is not used. Moreover, since the screen of each the 1st and 2nd display material adjoins at the time of use and it is located, an informational screen product becomes large. Separate information can be displayed on each of this screen, and it can make lengthwise form both screens successively in a navigation system. In this case, if the run direction of an automobile is expressed as a upward arrow etc., the map information on travelling direction can be displayed more widely than before.

[0033] In invention according to claim 2, since the 2nd display material is installed ahead of a case when the 1st display material is contained in the case, it also becomes possible to be able to store two display material efficiently and to express information only as the screen of the 2nd display material.

[0034] In invention according to claim 3, when the insertion mouth and display material of a record medium are prepared in the front face of a case, the aforementioned front face of a case can be stored in a wrap position for the 1st display material. Moreover, an informational screen product can be made large by making the 1st display material and the 2nd display material connect, and making the screen of both displays material adjoin.

[0035] In invention according to claim 4, the 2nd display material considers as what can be detached and attached freely to the 1st display material, and only when required, the 2nd display material can be used.

[0036] In invention according to claim 5, when the insertion mouth and display material of a record medium are prepared by folding up the 1st and 2nd display material, two display material can be arranged efficiently ahead [these].

[Translation done.]

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TECHNICAL FIELD

[Industrial Application] this invention relates to the display which is applied to display, such as an object for mount which has screens, such as a liquid crystal panel, and home use, especially display material changes into a receipt state, and can moreover make large area of the screen which can be viewed at the time of use.

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PRIOR ART

[Description of the Prior Art] Recently, the display material equipped with the liquid crystal panel used as the display screen of a navigation system as a TV receiving set is installed in in the car [of an automobile]. As a general thing, the display material which has a liquid crystal panel is attached in the upper limit of the support saddle of the exclusive use which starts from the floor line of an automobile etc. Moreover, the display of a display material receipt formula as shown in drawing 13 is also proposed. The display material 3 to which the drive bracket 2 which moves to an A1-A 2-way at the case 1 by which the structure is laid under the indoor console panel P of an automobile is formed, and has monitor display 3a, such as a liquid crystal panel, to this drive bracket 2 is supported free [rotation]. While the drive bracket 2 moves to A 2-way and is moving to the back end in a case 1, the display material 3 serves as a horizontal position shown by the (b), and is contained in a case 1. If two moves in the A drive bracket 1 direction, the display material 3 projects ahead of a case 1, and the display material 3 will show and start by the (b) with this protrusion operation, it will rotate into a posture, and monitor display 3a will be turned to the vehicle interior of a room.

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EFFECT OF THE INVENTION

[Effect of the Invention] In invention according to claim 1, since the 1st display material is contained inside a case, space is not narrowed by the display material in the state where it is not used. Moreover, since the screen of each the 1st and 2nd display material adjoins at the time of use and it is located, an informational screen product becomes large. Separate information can be displayed on each of this screen, and it can make lengthwise form both screens successively in a navigation system. In this case, if the run direction of an automobile is expressed as a upward arrow etc., the map information on travelling direction can be displayed more widely than before.

[0033] In invention according to claim 2, since the 2nd display material is installed ahead of a case when the 1st display material is contained in the case, it also becomes possible to be able to store two display material efficiently and to express information only as the screen of the 2nd display material.

[0034] In invention according to claim 3, when the insertion mouth and display material of a record medium are prepared in the front face of a case, the aforementioned front face of a case can be stored in a wrap position for the 1st display material. Moreover, an informational screen product can be made large by making the 1st display material and the 2nd display material connect, and making the screen of both displays material adjoin.

[0035] In invention according to claim 4, the 2nd display material considers as what can be detached and attached freely to the 1st display material, and only when required, the 2nd display material can be used.

[0036] In invention according to claim 5, when the insertion mouth and display material of a record medium are prepared by folding up the 1st and 2nd display material, two display material can be arranged efficiently ahead [these].

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TECHNICAL PROBLEM

[Problem(s) to be Solved by the Invention] However, in that by which display material is attached in the support saddle which starts from a floor line etc., in order that display material may narrow habitation space, it is not made to what has the big display screen, but becomes a small thing about a 5 inch screen. Moreover, in the thing of the display material receipt formula shown in drawing 13, while not using it, in order to start in the position where the display material 3 was dedicated in the case 1, and the display material 3 approached the console panel P at the time of use, habitation space is not narrowed so much. [0004] However, in what is shown in drawing 13, since a case 1 is what is laid under the console panel P, a limitation is in the content volume and, therefore, the display material 3 can seldom be enlarged. Since there is a possibility of hitting a shift lever 4 etc. when the display material 3 furthermore projects in the A1 direction by the horizontal position, a limitation is to enlarge the display material 3 also from this. In any case, the screen of the display material used for the display for mount becomes a small thing, and an informational screen product will be limited. Moreover, although what has the larger breadth size of the direction of X than the dip size of the direction of Y oblong is common at drawing 13 as for screens, such as a liquid crystal panel for example, on the screen used as a navigation system Since it is displayed in many cases that the arrow which shows the current position and travelling direction of an automobile serves as facing up of the direction of Y, on an oblong screen, the map information on the direction of Y which travelling direction, i.e., an arrow etc., shows may become short, and it may become difficult to discriminate the direction of the purpose. [0005] this invention does not solve the above-mentioned conventional technical problem, and it can store it, without narrowing habitation space, when not using it, and it aims at offering the display which could be made to make an informational screen product large substantially at the time of use.

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MEANS

[Means for Solving the Problem] The 1st display material to which the display of this invention can move between the position contained in a case, and the positions installed in the exterior of a case, It is characterized by preparing the 2nd display material compared with the display material of the above 1st where the 1st display material is installed out of a case, and preparing the screen which adjoins the 1st and 2nd display material mutually where both displays material is put in order.

[0007] In this case, it is in the state where the 1st display material was contained in the case, and it is possible to consider as the structure where the 2nd display material is installed in the front face of a case.

[0008] Moreover, the case by which, as for the display material of this invention, the insertion mouth or control unit of a record medium was formed in the front face, The 1st display material which can move between the positions where the position and the aforementioned insertion mouth which are installed in the front face of the aforementioned case, or a control unit appears, It is characterized by preparing the 2nd display material compared with this 1st display material, and preparing the screen which adjoins the 1st and 2nd display material mutually where both displays material is put in order.

[0009] ** [in the above, it is good also as attachment and detachment being free to the 1st display material in the 2nd display material] [0010] Or you may connect so that the 2nd display material and the 1st display material can be folded into the state of lapping mutually.

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OPERATION

[Function] In this invention, habitation space is not narrowed by considering as the structure which contains display material inside a case by the display material in the state where it is not used. Moreover, since the screen of each the 1st and 2nd display material adjoins at the time of use and it is located, an informational screen product becomes large substantially. When separate information can be displayed on each of this screen and it is used as a navigation system etc., it can make lengthwise form both screens successively. In this case, if the run direction of an automobile is expressed as a upward arrow etc., the map information on travelling direction can be displayed more widely than before.

[0012] Moreover, although it is also possible to contain in a case with the 1st display material, the 2nd display material can express information only as the screen of this 2nd display material, if the 1st display material installs the 2nd display material ahead of a case when contained in the case.

[0013] Furthermore, in this invention, when the insertion mouth and display material of a record medium are prepared in the front face of a case, the aforementioned front face of a case can usually be stored in a wrap position for the 1st display material. If this 1st display material is moved, the aforementioned insertion mouth and display material will appear and insertion and various operations of a record medium into a case will be attained. Since the 2nd display material is made to connect and the screen of both displays material is made to adjoin when the 1st display material separates from the front face of a case also in this case, an informational screen product can be substantially made large.

[0014] To the 1st display material, the 2nd display material at this time is good also as what can be detached and attached freely, or is in the state which folded up the 1st and 2nd display material, and may store the aforementioned insertion mouth and display material in a wrap position for both displays material.

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EXAMPLE

[Example] Hereafter, the example of this invention is explained with reference to a drawing. The perspective diagram in which drawing 1 shows the display for mount as the 1st example of this invention, the side elevation in which display material shows the state where drawing 2 was contained by the case, the perspective diagram in which drawing 3 shows the example of mounting of this display for mount in the car, drawing 4, or drawing 6 is the front view showing the example of the information display of a screen. In drawing 1 and drawing 2, a sign 11 is a case. This case 11 is the so-called Wang Dean (1DIN) size, and as shown in drawing 3, it serves as a size which can be laid underground in the installation space of the same capacity as the sound equipments O, such as a car radio, a CD player, and a tape player, in the console panel P of an automobile. The clock decorative rim 12 is attached ahead of the case 11. A case 11 is laid underground in a console panel P, and a clock decorative rim 12 appears in the front face of a console panel P. The portion surrounded by the clock decorative rim 12 is opening 11a of a case 11. The 1st display material 13 and the 2nd display material 14 are formed in this display for mount. As shown in drawing 1, outside a case 11, depending on a way, both the displays material 13 and 14 is put in order up and down, and can be arranged now.

[0016] As shown in drawing 2, the guide section 21 is formed in the interior of a case 11, and it is supported so that the drive bracket 22 can move to an A1-A 2-way by this guide section 21. The 1st motor is formed in the drive bracket 22, and the rotation drive of the pinion gearing 23 is carried out by this motor. The rack 24 was formed in the case 11 and the aforementioned pinion gearing 23 meshes on this rack 24. By carrying out the rotation drive of the pinion gearing 23 by the aforementioned motor, the drive bracket 22 can be moved now to an A1-A 2-way along with the guide section 21 and a rack 24. The support plate 25 of the couple which opened the interval in the direction of the space back of drawing 2 is fixed to the drive bracket 22, and the base of the 1st display material 13 is supported free [rotation] with the shaft 26 prepared in the point section of the support plate 25 of this couple. In the drive bracket 22, it is supported so that the drive rack 28 can move in the (c) direction, and the pinion gearing 27 by which a rotation drive is done by other motors carried in the 1st motor of the above or the drive bracket 22 meshes with this drive rack 28. The nose of cam of the drive rack 28 is connected with the 1st display material 13 by the drive pin 29.

[0017] An interval is opened in the point section of the 1st display material 13 in the direction of the space back of drawing 2, the connection support plate 31 of a couple is being fixed, and the 2nd display material 14 is connected by the connecting shaft 32 prepared in this connection support plate 31. The drive section 33 is formed in the interior of the 1st display material 13, it is supported so that the drive rack 35 can move in the (d) direction into this drive section 33, and the nose of cam of the drive rack 35 is connected with the base of the 2nd display material 14 by the drive pin 36. The 2nd motor was formed in the drive section 33, and the pinion gearing 34 which drives by this motor meshes with the aforementioned drive rack 35.

[0018] In drawing 2, the 1st display material 13 by which the drive rack 28 supported in the drive bracket 22 drove in the (d) direction, and was supported by the point section of a support plate 25 serves as a horizontal position, the drive bracket 22 moves to A 2-way further, and the 1st display material 13

is contained in the case 11. At this time, within the drive section 33 in the 1st display material 13, it is driving in the (c) direction, and therefore, the drive rack 35 makes a connecting shaft 32 the starting point, and is rotating the 2nd display material 14 to the right-angled sense to the 1st display material 13. At this time, the 2nd display material 14 is in the state which fitted in exactly in the clock decorative rim 12, and as shown in drawing 6, only the 2nd display material 14 has appeared ahead of the case 11. If the 1st motor in the drive bracket 22 starts and the pinion gearing 23 rotates from the state of drawing 2 to a clockwise rotation, the pinion gearing 23 will move in the A1 direction in the state where it geared on the rack 24, and, therefore, will move the drive bracket 22 in the A1 direction along with the guide section 21. Therefore, while the 1st display material 13 has been a horizontal position, it projects in the A1 direction from the inside of a case 11, and the 2nd display material 14 moves in the A1 direction together with the perpendicular posture of drawing 2.

[0019] If the 1st display material 13 projects completely out of a case 11, the drive bracket 22 will stop. And the power of the 1st motor in the drive bracket 22 is changed, or the pinion gearing 27 drives to a clockwise rotation by other motors in the drive bracket 22, and the drive rack 28 drives in the (c) direction. Therefore, the 1st display material 13 is pulled in the (c) direction by the drive pin 29, starts centering on a shaft 26, and is rotated to a direction. By adjusting the pinion gearing's 27 rotation, the 1st display material 13 starts and an angle is set up arbitrarily. The display material 13 of the above 1st starts, during rotation operation, the pinion gearing 34 drives to a counterclockwise rotation by the 2nd motor in the drive section 33, and the drive rack 35 moves in the (d) direction. Therefore, the 2nd display material 14 rotates counterclockwise by making a connecting shaft 32 into the starting point, and it is put in order up and down so that the 1st and 2nd display material 13 and 14 may serve as the same field mostly, as shown in drawing 1. In addition, receipt operation of the 1st display material 13 and the 2nd display material 14 can be performed by performing the drive of the above and an opposite direction.

[0020] In the example of mounting in the vehicle interior of a room shown in drawing 3, the 1st display material 13 and the 2nd display material 14 which projected from the case 11 are put in order by the plane ahead [of a console panel P], and each display material 13 and 14 serves as slanting sense a little corresponding to the inclination of a console panel P. As shown in drawing 4, the 1st screen 41 of an electrochromatic display panel is established in the front face of the 1st display material 13, and, similarly the 2nd screen 51 of an electrochromatic display panel is established in the front face of the 2nd display material 14. Both the breadth sizes of the 1st screen 41 and the 2nd screen 51 are W, and H1 and the dip size of the 2nd screen 51 of the dip size of the 1st screen 41 are H2. The 2nd display material 14 is installed in the front face of a case 11, as shown in drawing 2, and the size of the length and width is decided with one DIN size. Therefore, the 2nd screen 51 is the small oblong configuration of the dip size H2. On the other hand, the length of the 1st screen 41 and the horizontal proportion are the same as a common television screen. And where the 1st and 2nd display material 13 and 14 is perpendicularly arranged in the exterior of a case 11, both the screens 41 and 51 adjoin up and down, and are located in a line, and a latus screen product is obtained substantially [a dip size / almost (H1+H2)] with the width-of-face size W.

[0021] Although various operating member is arranged in the front face of both the displays material 13 and 14, the operating member which performs operation about a setup and change of a screen display is arranged in the front face of the 1st display material 13. The operating member prepared in the 1st display material 13 is an electric power switch 42, the various setting buttons 43 and 44, the move input section 46 of a cursor display, the screen zoom operating button 47, various ***** 48, television ***** 49, etc. ON-OFF [with an electric power switch 42 / the display of Screen 41]. For example, if either changes and a screen display is changed to a navigation system by operation of ** 48, a map will be displayed on the 1st screen 41. The map which should be displayed by code input operation of setting buttons 43 and 44 is chosen. Moreover, selection of the information which changes, can perform memory operation etc. by ** 48, changes further, and is displayed on the 2nd screen 51 by ** 48 can be performed. Moreover, by the move input section 46 of a cursor display, the position of the cursor display 60 which shows the current position and travelling direction can be moved. Moreover, if

television television ***** 49 is pushed, a television screen will project on the 1st screen 41. Selection of a television channel is performed by the setting button 44 at this time.

[0022] In the front face of the 2nd display material 14, the operating member of the sake for sound operation is arranged. An electric power switch 52 is a thing for ON-OFF of the 2nd screen 51. The tuner setting button 53 and the disk selector button 54 are formed in the 2nd display material 14. A push on the tuner setting button 53 operates the tuner which receives FM broadcasting and AM broadcast. In addition, this tuner is prepared in the case 11. The disk selector button 54 operates the disk changer installed in the trunk room etc., and selection of the disk which should be played by this selector button 54 is made. Adjustment switches 56 and 57 are for performing song selection and a storage configuration when channel selection operation when the tuner is operating is performed or the disk changer is operating. Moreover, volume is set up by the volume control switch 58.

[0023] Selection of the information projected on the 2nd screen 51 as mentioned above was prepared in the 1st display material 13, is changed, and is set up by ** 48 etc. However, the information projected on the 2nd screen changes also to the 2nd display material 14, ** 55 is formed, and as shown in drawing 2 and drawing 6, when the 2nd display material 14 is installed in the front face of a case 11, channel selection information, song selection information, a clock display, etc. are projected on the 2nd screen 51. As a concrete content of a display projected on the 1st and the 2nd screen 41 and 51, as first shown in drawing 4, it can project so that both the screens 41 and 51 may be followed in the map of the predetermined area in a navigation system. In the example of drawing 4, the cursor display 60 which shows the current position of an automobile is an arrow display, and the direction of this arrow shows the travelling direction of an automobile. The sense of this arrow is turned upward and a map display moves according to movement of an automobile. The 2nd screen 51 adjoins on the 1st screen 41 of the area restricted as shown in drawing 4, since the map which follows both the screens perpendicularly located in a line has projected, only the part of the 2nd screen 51 can project widely the map information on travelling direction that the arrow of the cursor display 60 is suitable, and many information on travelling direction can be checked.

[0024] Moreover, the map of the area it is running now may be projected on the 1st screen 41, and the map display of an area other than the area under run on the 2nd screen 51 may be projected. Thereby, the map of the destination or a circumference area can be checked. Or as shown in drawing 5, you may be projected map information only on the 1st screen 41, and run information other than a map may be projected on projection and the 2nd screen 51. In the example of drawing 5, distance until it reaches there [the information on intersectional and there] where it should next turn on the 2nd screen 51 has projected. Or you may display anticipation time until it reaches the 2nd screen 51 at traffic congestion information and a certain point etc. Moreover, map information may be projected on the 1st screen 41, and the channel selection information and song selection information on operation of a tuner or a disk changer may be projected on the 2nd screen 51.

[0025] When projecting a television television screen on the 1st screen 41, the 2nd screen 51 may be erased or a time stamp etc. may be projected on the 2nd screen 51. As shown in drawing 1, where the 1st display material 13 is contained in a case 11, only the 2nd display material 14 appears ahead of a case 11. The state is shown in drawing 6. Although a tuner, a disk changer, etc. are operated by the various operating member prepared in the 2nd display material 14 at this time, the various information at this time is projectable on the 2nd screen 51. In drawing 6, the channel selection information on FM broadcasting and the equalizer display 61 are displayed.

[0026] The front view [side elevation / the] showing the state where the front view of the display for mount according / drawing 7 / to the 2nd example of this invention and drawing 8 were put in order, and two display material was put in order, as for drawing 9, and drawing 10 are the side elevation. In this example, a case 71 is two DIN (2DIN) size, and only one case 71 is laid underground and installed in the console panel P of an automobile in the space under which two sound equipments are originally laid. the front of a case 71 -- a nose -- the section 72 is attached A sign 73 is the 1st display material. the state of drawing 7 and drawing 8 -- the 1st display material 73 -- a nose -- it is installed in the state where it stuck ahead of the section 72 As shown in drawing 7 at this time, only the 1st display material 73 has

appeared in the front face of a case 71. it is shown in drawing 10 -- as -- a nose -- the nose which the internal mechanism of the section 72 and the 1st display material 73 are connected by the arm 74, and shows the 1st display material 73 to drawing 8 by slide operation of this arm 74 -- it is shown in drawing 10 from the state stuck to the front face of the section 72 -- as -- a nose -- it can move now to the state where separated slightly to the front and it shifted from the section 72 upwards operation in case the 1st display material 73 moves between the states which show in the state which shows in drawing 8, and drawing 10 -- hand control -- you may carry out -- or a nose -- you may make it operate with the power of the motor formed in the section 72 and the case 71

[0027] it is shown in drawing 9 -- as -- the 1st display material 73 -- a nose -- the time of separating from the section 72 and shifting upwards -- the lower part of the 1st display material 73 -- a nose -- makeup side 72a of the front face of the section 72 appears The operating button 78 for making eccentric operation of the insertion mouth 75 of a mini disc, the insertion mouth 76 of a compact disk and a mini disc, or a compact disk etc. perform is arranged by this makeup side 72a. In addition, as for the insertion mouths 75 and 76, only either may be prepared, and the operating button 78 may be formed in the front face of the 1st display material 73. Moreover, the insertion mouths 75 and 76 may not be formed in makeup side 72a, but the small display screen which performs the various operating buttons for sound equipments, a channel selection display, etc. may be prepared. Moreover, in the aforementioned case 71, the drive for driving the mini disc and compact disk which were inserted from the above-mentioned insertion mouths 75 and 76 is built in. In addition, the record media inserted may be various cassette tapes.

[0028] The 1st Screen 81 and various operating-member groups 82 by the electrochromatic display panel are prepared in the front face of the 1st display material 73. The kind and number of these operating-member groups 82 are as of the same kind as the various operating buttons prepared in the 1st display material 13 shown in drawing 4 etc. Moreover, you may include the operating button for reproduction of the mini disc and compact disk which were inserted in the operating-member group 82 of the 1st display material 73, a song selection setup, etc. as mentioned above. However, since the 1st display material 73 is a size which is in agreement with the front face of the case 71 of 2DIN sizes, the area of the 1st screen 81 is a little small thing doubled with 2DIN sizes. then, it is shown in drawing 9 and drawing 10 -- as -- the 1st display material 73 -- a nose -- in the state where separated from the section 72 and it shifted upwards, the 2nd display material 85 can be attached now on the 1st display material 73 This 2nd display material 85 is inserted in the upper surface of the 1st display material 73 by the connection material 86, and is made and attached. The 2nd power supply, video signal, etc. to the display material 85 are given through the connector in the connection material 86. The 2nd screen 87 by the electrochromatic display panel is established in the 2nd display material 85. This screen 87 has the same screen product as the aforementioned screen 81. And as shown in drawing 9 and drawing 10, when the display material 73 and 85 is put in order, both the screens 81 and 87 will adjoin up and down, and will be located in a line.

[0029] with this display for mount, the 2nd display material 85 is carried out the upper shell of the 1st display material 73 outside usually, and it is shown in drawing 7 and drawing 8 -- as -- the 1st display material 73 -- a nose -- it is stored in the state where it stuck ahead of the section 72 As shown in drawing 7, an image can be projected on the 1st screen 81 in this state. This image is a television television screen or the map information on a navigation system. or the 1st display material 73 -- a nose -- it may separate from the section 72, and may be made to shift upwards, and an image may be projected only on the 1st screen 81 in this state moreover -- the case where receipts and payments of a mini disc and a compact disk are performed into a case 71 -- the 1st display material 73 -- a nose -- it moves to the position which separates from the section 72 and is shifted upwards -- making -- the bottom of the 1st display material 73 -- a nose -- makeup side 72a of the section 72 is exposed Insertion and eccentric of a mini disc or a compact disk are performed from the insertion mouths 75 and 76 in this state.

[0030] moreover -- for example, when displaying the screen of a navigation system, it is shown in drawing 9 and drawing 10 -- as -- the 1st display material 73 -- a nose -- a substantial area of the display

screen is expandable by separating from the section 72, making it shift upwards, and installing the 2nd display material 85 on the 1st display material 73. In this case, the map information ahead of travelling direction can be widely displayed by indicating the same map information as both the 1st and 2nd screen 81 and 87 by continuation like the example shown in drawing 4, and showing the cursor display 60 which shows the position and travelling direction of an automobile in the 1st screen 81. Or as shown in drawing 9, it may project by scale which is different in the map of a run area on the 1st Screen 81 and 2nd screen 87, and the cursor displays 60a and 60b which show the current position and travelling direction of an automobile to both the screens 81 and 87 may be shown separately. Or you may display an information image with the same separate combination as the 1st example explained on the 1st and the 2nd screen 81 and 87. Moreover, although the 2nd display material 85 can detach and attach freely to the 1st display material 73 in the 2nd example shown in drawing 7 or drawing 10, in the example of the same DIN sizes, it is good also as an example shown in drawing 11 and drawing 12.

[0031] The 1st display material 73 is contained in a case 71 using having been shown in drawing 2, and an internal mechanism of the same kind, and it enables it to install the 2nd display material 85 in the front face of the case 71 of 2DIN sizes in the example shown in drawing 11 at this time. moreover -- drawing 12 -- a nose -- the case where the insertion mouths 75 and 76 as shown in makeup section 72a of the front face of the section 72 at drawing 9 etc. are formed -- the 1st display material 73 -- a nose -- it fits in the position stuck to the front face of the section 72 and the 2nd display material 73 and 85 connects with the 1st by the link 88 -- having -- a nose -- the 1st and 2nd display material 73 and 85 is folded up and installed in the state of sticking mutually, ahead [of the section 72] It is also possible to consider as the structure where the 1st and 2nd display material is contained [both] in a case, in each aforementioned example furthermore. Moreover, this invention may be the display or the display for home use which is not restricted to the display for mount but is carried in an airplane etc.

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] The perspective diagram showing the state where both displays material projected in the display for mount of the 1st example of this invention,

[Drawing 2] The side elevation showing the state where display material was contained in the 1st example,

[Drawing 3] The perspective diagram showing the example in which display for mount of the 1st example was mounted in automatic in the car,

[Drawing 4] Front view showing an example of the image projected on the screen of two display material in the 1st example,

[Drawing 5] Front view showing other examples of the image projected on the screen of two display material in the 1st example,

[Drawing 6] Front view showing an example of the image projected only on the screen of the 2nd display material in the 1st example,

[Drawing 7] Front view of the display for mount of the 2nd example of this invention,

[Drawing 8] The side elevation of the 2nd example,

[Drawing 9] Front view showing the state where two display material was connected in the 2nd example,

[Drawing 10] The side elevation of the state of drawing 9 ,

[Drawing 11] The side elevation showing the modification of the 2nd example,

[Drawing 12] The side elevation showing the modification of the 2nd example,

[Drawing 13] The perspective diagram showing the conventional display for mount,

[Description of Notations]

11 Case

12 Clock Decorative Rim

13 1st Display Material

14 2nd Display Material

41 1st Screen

51 2nd Screen

71 Case

72 Nose -- Section

73 1st Display Material

81 1st Screen

85 2nd Display Material

87 2nd Screen

P Console panel

[Translation done.]

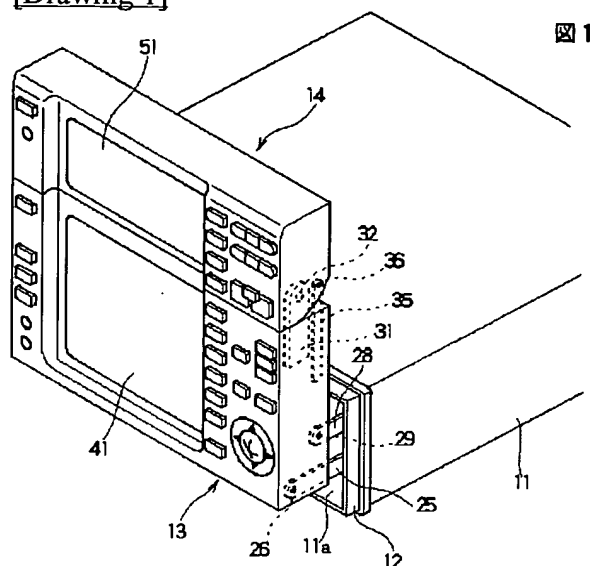
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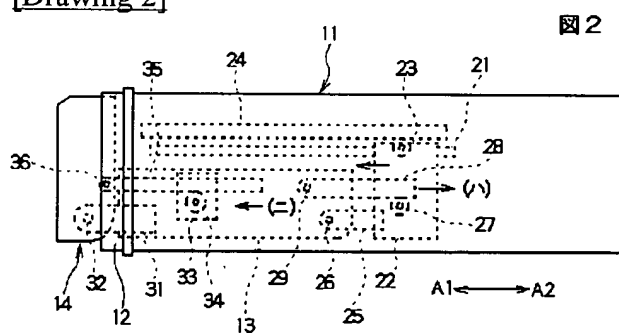
1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

DRAWINGS

[Drawing 1]

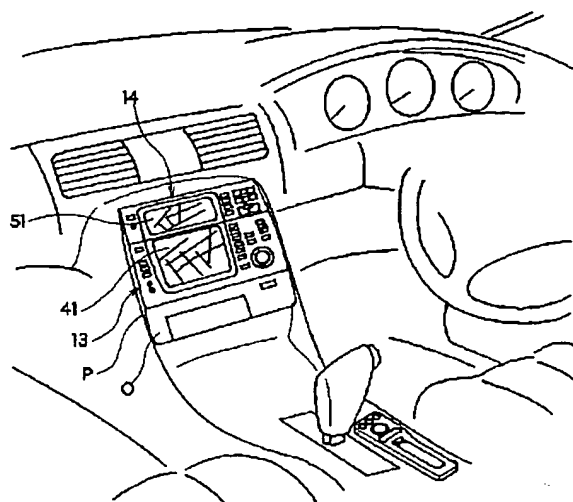


[Drawing 2]



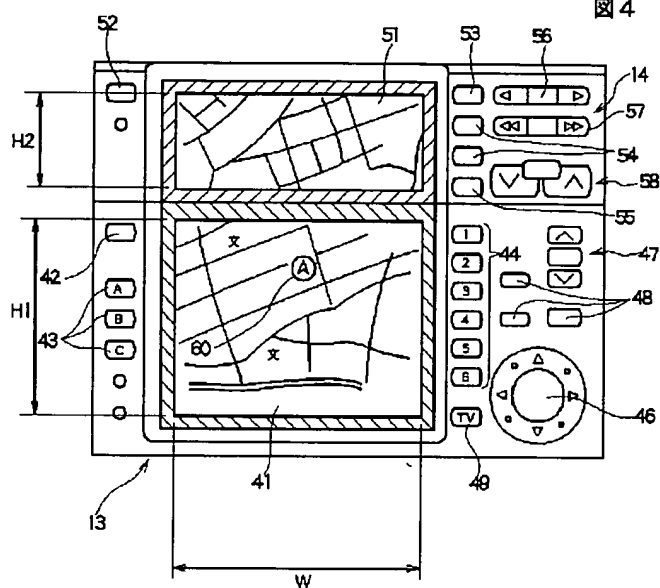
[Drawing 3]

図 3



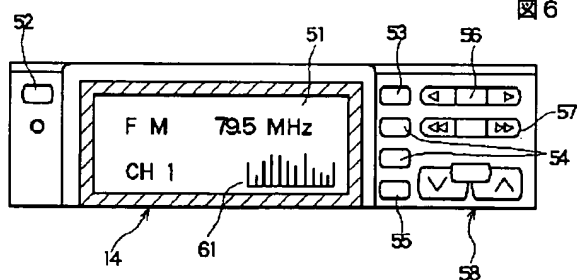
[Drawing 4]

図 4

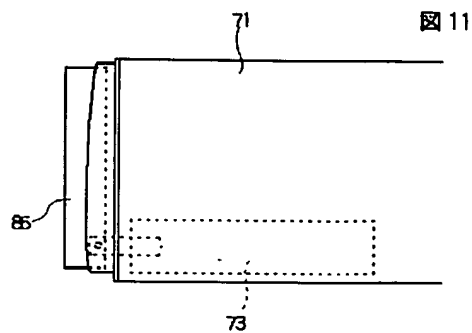


[Drawing 6]

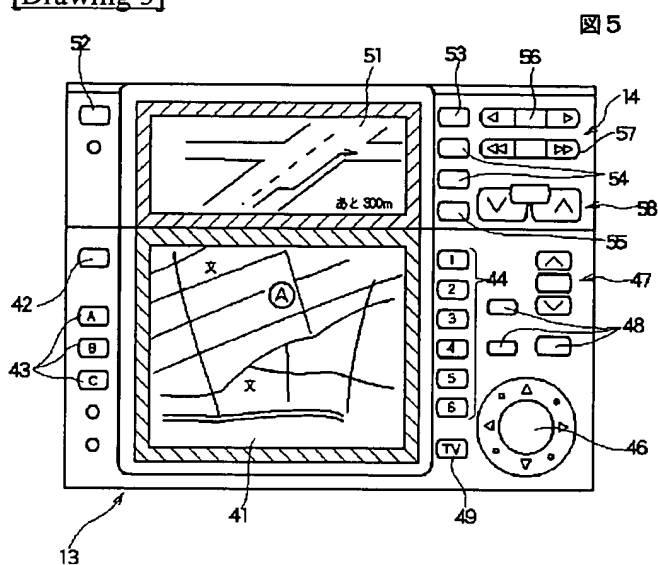
図 6



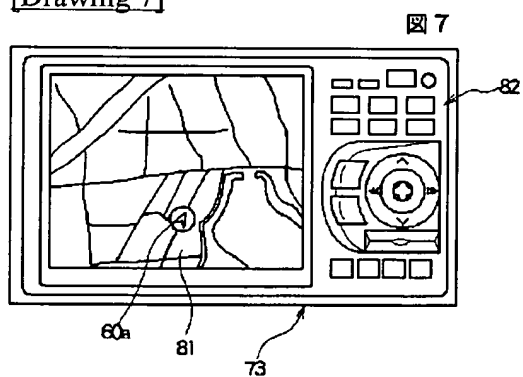
[Drawing 11]



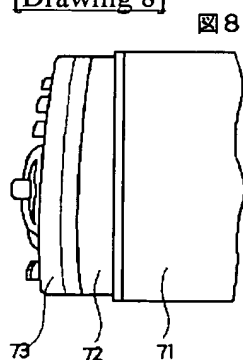
[Drawing 5]



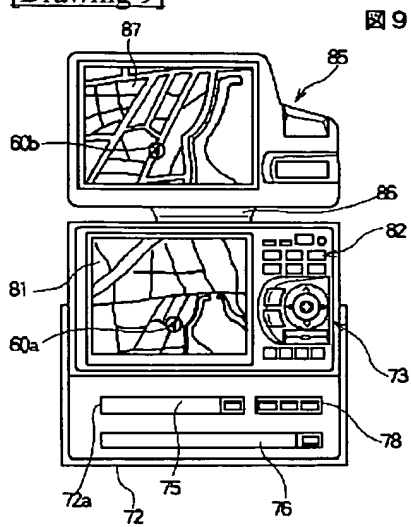
[Drawing 7]



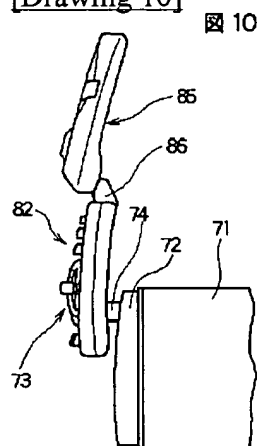
[Drawing 8]



[Drawing 9]

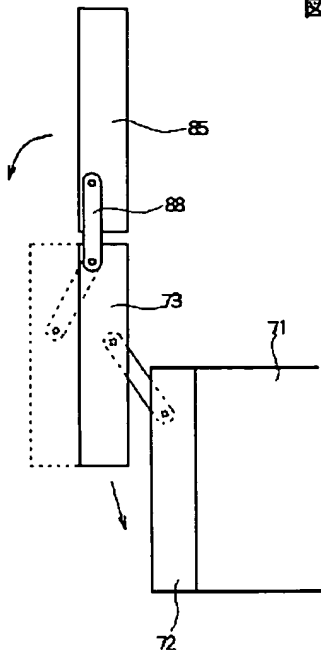


[Drawing 10]



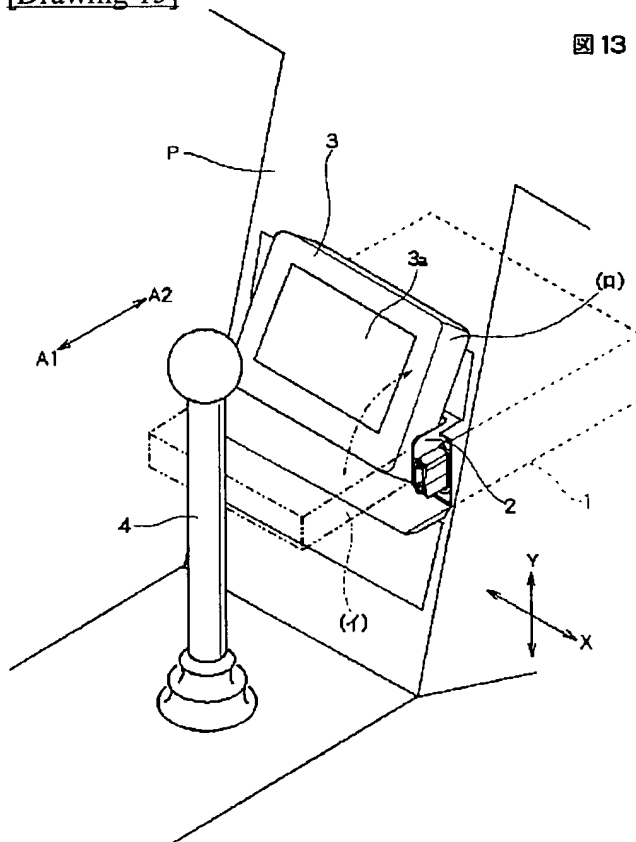
[Drawing 12]

図 12



[Drawing 13]

図 13



[Translation done.]